

30 June 2004

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10/517001

DT15 Rec'd PCT/PTO 03 DEC 2004

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**REPLY TO WRITTEN OPINION**  
**INTERNATIONAL PATENT APPLICATION PCT/FI2003/000462**  
**APPLICANT: NOKIA CORPORATION**  
**DUE DATE: 17 JULY 2004**

On account of the Written Opinion issued on 18 May 2004 we submit the following:

In the present invention a mobile device receives update data from a network (claim 1, page 11, line 4; claim 9, page 12, lines 12-13). The received update data is stored in the external memory unit of the mobile device (claim 1, page 11, lines 6-7; claim 9, page 12, lines 14-15). The external memory unit can be for example a MultiMediaCard (MMC), charger or another peripheral device having memory (page 3, lines 7-13). The external memory unit is used for storing the update data and no functionality is required from it (e.g. page 5, lines 32-34). Finally the mobile device is updated by programming the stored update data in its permanent memory unit. The updating is performed according to the programming logics provided in the mobile device (claim 1, page 11, lines 8-10; claim 9, page 12, lines 16-18).

In D1 (US2002087759) an operating software code is transmitted from a network, correspondingly as disclosed in the invention. In D1 the operating software code is transmitted to a wireless module having its own functional blocks, such as an antenna, a receiver, a transmitter, a processor, memories and an user interface, i.e. roughly corresponding to the mobile device according to the present invention. According to D1 this module receiving the operating software code then updates

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peripheral devices [e.g. page 1, paragraph 0006; page 2, start of paragraph 0017]. So according to D1 the peripheral devices are updated, whereas according to the present invention the mobile device is updated and a peripheral device (memory unit) is used only for storing the fetched update data.

The solution presented in D1 is used for fetching an operating software code from the network (by a wireless module) in order to distribute the operating software to (possibly number of) peripheral devices, i.e. peripheral devices are updated by the wireless module. Especially D1 aims to providing a peripheral device with a fail-safe system for updating an embedded operational software code without calling and servicing the peripheral device [page 1, end of paragraph 0004]. The present invention, on the other hand, concentrates on updating the firmware of the mobile device using only the mobile device for the operation, i.e. no other functional device is required. Updating the firmware of the mobile device according to the present invention is not disclosed in D1, thus the present invention is new and inventive in view of D1.

D2 (US6044265) discloses updating cellular sets so that data update is transmitted via control channel [abstract, line 1; column 3, lines 20-21], whereas in the present invention update data is received from the network. In D2 a cellular set checks from the control channel data update directed to it [column 4, lines 64-65]. The data update is broadcasted over the control channel by the command of a controller [column 6, lines 9-10]. In the present invention a mobile devices triggers the updating and stores updating data to its external memory. D2 does not disclose fetching data from the network, but transmitting data update via control channel. This lead to further differences in receiving data update. Also entity controlling the updating and triggering the data update transmitting in D2 is different than presented in the invention. Thus the present invention is new and inventive in view of D2.

D1 aims at providing a peripheral device with a fail-safe system for updating [page 1, end of paragraph 0004]. This safety requirement relates to wireless transferring of data. D1 is considered to be the closest prior art since it has common features with the present invention, namely transferring update data from the network. D2 aims at reprogramming and sending data updates simultaneously to multiple cellular sets without completing a full call [column 3, lines 6-9], i.e. so that capacity of a voice channel is conserved [column 3, lines 15-16]. Thus publications D1 and D2 have different objectives. Also teachings of publications D1 and D2 lead to different directions. Teaching of D2 differs from teaching of D1 by way of transmitting data for updating, since in D2 control channel is used for distributing data, whereas in D1 data is received from network. Further in D1 a wireless module is used for updating peripheral devices, whereas in D2 the update data is sent



and programmed by command of a controller. These publications are not combinable due to different aims and solutions presented in those. Even if the D1 and D2 were combinable by a skilled person, they would not lead to solution presented in the invention.

For clarity reasons and to ensure better comprehending for third parties, the independent claims 1 and 9 have been clarified. As suggested by the examiner, "by mobile device" in claim 1, lines 4-5 is modified. The modified claim 1 is in form "using mobile device" in order to emphasize that the transferring is made by the mobile device (not only through it). In line 8 of claim 1, definite article "*the* permanent memory unit" is displaced by indefinite article "a permanent memory unit", since a permanent memory unit of the mobile device is disclosed here for the first time, and especially the permanent memory unit is different from the logic, external memory unit, mentioned previously in the claim 1. The analogous change of an article is repeated in claim 9, line 16.

On the basis presented in previous, we are in the opinion that the application is new, inventive, and thus patentable with the modified claims 1 and 9.

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Amended claims

**Claims**

1. A method for updating a firmware of a mobile device belonging to a network, **characterized** in that the method comprises steps of

- transmitting update data from a network unit using a mobile device (403), to which there is connected a logic, external memory unit,
- storing the update data in the external memory unit (203, 303, 406) of the mobile device, and
- programming the stored update data in a permanent memory unit (204, 306, 408) of the mobile device, according to the programming logics provided in the mobile device.

2. A method according to claim 1, **characterized** in that it comprises a step of transmitting the update data from the network unit to the mobile device as a response to a certain function that triggers the transmission, said function being one of the following: choosing from the network unit's menu (402) by a user, choosing from the mobile device's menu (201) by a user, an appearing of new update data to the network unit, or an outdating (301) of the firmware of the mobile device.

3. A method according to claim 1, **characterized** in that the logic, external memory unit is connected to the mobile device by means of an external memory bus (105).

4. A method according to claim 1, **characterized** in that it comprises a step of transmitting the update data by the mobile device (403), where the update data is converted to be compatible with the memory unit and with the memory bus (405) to be connected thereto, whereafter the converted update data is transmitted to the external memory unit along the memory bus (406).

5. A method according to claim 1, **characterized** in that it comprises a step of transmitting the update data by a mobile device, through which the update data is directly transmitted further to the external memory bus of the mobile device along a memory bus (203).

6. A method according to claim 1, **characterized** in that it comprises a step of programming the update data stored in the external memory unit in the mobile device, when the mobile device is switched on for the next time (304, 307, 407, 409).

7. A method according to claim 1, **characterized** in that it comprises a step of copying the programming logics for programming the update data from an external memory unit to the permanent memory unit of the mobile device prior to programming the update data (305).
- 5 8. A method according to claim 1, **characterized** in that it comprises a step of storing the programming logics for updating the update data from the permanent memory of the mobile device to the RAM memory of the mobile device prior to programming the update data.
9. An arrangement for updating a firmware of a mobile device belonging to a  
10 network, **characterized** in that the arrangement includes
- an external memory unit (106) for storing the update data,
  - means for transmitting the update data from a network (107) unit to the external memory unit (106) of the mobile device,
  - means for storing the update data to the external memory unit (106) of the  
15 mobile device, and
  - means for programming the stored update data to a permanent memory unit (102) of the mobile device by means of a programming driver provided in the mobile device.
10. An arrangement according to claim 9, **characterized** in that the mobile device  
20 includes an external bus (105) for connecting a logic, external memory unit (106) to the mobile device (101).
11. An arrangement according to claim 9, **characterized** in that the mobile device includes means for converting the update data into a form (104, 105) required by the external memory unit.
- 25 12. An arrangement according to claim 9, **characterized** in that the mobile device includes means for copying the programming driver to its permanent memory unit (102) from the external memory unit (106) prior to programming the update data.
13. An arrangement according to claim 9, **characterized** in that said means are programmable means.